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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/838,708

04/18/2001

Lee Felsenstein

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12/18/2002

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EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/838,708

Applicant(s)

FELSENSTEIN ET AL.

Examiner

Toan M Le

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) 12-68, 79-80 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 69-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takemoto et al..

Referring to claim 1, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, comprising: an array of parallel conductors responsive to a magnetic field generated by the magnetic field generator; a plurality of receivers each associated with a parallel conductor; and a plurality of drivers each coupled with a parallel conductor and configured to drive current through to produce an energized field used in locating the object (col. 2, lines 35-42; col. 13, lines 29-39; and col. 14, lines 1-4; figures 1 and 6).

As to claim 2, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, wherein the array of parallel conductors is configured to locate the object along a measurement path (figures 1 and 6).

Referring to claim 3, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, wherein the measurement path comprises a measurement axis, and the array of parallel conductors is orthogonal to the measurement axis (figures 1 and 6).

As to claim 4, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, further comprising a plurality of drivers each associated with a parallel conductor and configured to drive current through to produce an energizing field (figure 6).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemoto et al..

Referring to claims 5-9, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, comprising: an array of parallel conductors responsive to a magnetic field generated by the magnetic field generator; a plurality of receivers each associated with a parallel conductor; and a plurality of drivers each coupled with a parallel conductor and configured to drive current through to produce an energized field used in locating the object, wherein the return conductor is disposed at an end of the array of parallel conductors (col. 2, lines 35-42; col. 13, lines 29-39; and col. 14, lines 1-4; figures 1 and 6).

Takemoto et al. does not teach a position detection system for locating an object including a magnetic field generator, wherein at least one driver is configured to send current

Art Unit: 2862

through the associated parallel conductor in one direction, and at least one driver is configured to send current through associated parallel conductor in an opposite direction so that the net current through the array of parallel conductors is substantially zero and/or to balance current between the drivers to produce a constant offset to the energizing fields produced by the array of parallel conductors.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have had at least one driver is configured to send current through the associated parallel conductor in one direction, and at least one driver is configured to send current through associated parallel conductor in an opposite direction so that the net current through the array of parallel conductors is substantially zero and/or to balance current between the drivers to produce a constant offset to the energizing fields produced by the array of parallel conductors for balancing the net current flowing through the conductors to eliminate electromagnetic interference in the measuring circuitry to have a more precise position detection system.

Claims 10-11 and 69-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemoto et al. in view of Dames et al..

Referring to claims 10-11, Takemoto et al. discloses a position detection system for locating an object including a magnetic field generator, comprising: an array of parallel conductors responsive to a magnetic field generated by the magnetic field generator; a plurality of receivers each associated with a parallel conductor; and a plurality of drivers each coupled with a parallel conductor and configured to drive current through to produce an energized field

used in locating the object (col. 2, lines 35-42; col. 13, lines 29-39; and col. 14, lines 1-4; figures 1 and 6).

Takemoto et al. does not teach a position detection system for locating an object including a magnetic field generator, wherein the magnetic field generator includes a resonator includes an inductor and capacitor that is energized by the energizing field.

Dames et al. discloses a a position detection system for locating an object including a magnetic field generator, wherein the magnetic field generator includes a resonator includes an inductor and capacitor that is energized by the energizing field (col. 24, lines 51-56; figure 5a).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added a resonator includes an inductor and capacitor that is energized by the energizing field as described in the reference of Dames et al. into the system of Takemoto et al. to provide a greatest magnetic coupling among the conductors to have a more precise position detection system.

As to claims 69-78, Takemoto et al. discloses a method incorporated into a system for detecting position of an object, comprising: providing an array of parallel conductors; a plurality of receiver; associated each receiver with a parallel conductor; a plurality of drivers; associating each driver with a parallel conductor to drive current through the parallel conductor to produce an energizing field used in locating the object; further comprising configuring the array of parallel conductors to locate the object along the measurement path wherein the measurement path comprises a measurement axis, and the array of parallel conductors spaced by a constant spacing is orthogonal to the measurement axis (figures 1 and 6).

Takemoto et al. does not teach a method for detecting position of an object including a resonator to sense magnetic flux from the resonator, wherein the array of parallel conductors includes spacing the parallel conductors apart by a sinusoidally variable spacing according to a position of each parallel conductor in the array of parallel conductors.

Dames et al. teaches a method for detecting position of an object including a resonator to sense magnetic flux from the resonator, wherein the array of parallel conductors includes spacing the parallel conductors apart by a sinusoidally variable spacing according to a position of each parallel conductor in the array of parallel conductors (figure 2a).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied a resonator with the array of parallel conductors includes spacing the parallel conductors apart by a sinusoidally variable spacing according to a position of each parallel conductor in the array of parallel conductors as described in the Dames et al. reference into the method of Takemoto et al. to improve accuracy of detecting position of an object.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-11 and 69-78 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (703)305-4016. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..


Art Unit: 2862

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (703)305-4816. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-0956.

Toan Le

December 12, 2002

  
EDWARD LEFKOWITZ  
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